

Ship 23/12

Work Order ID 77702

December-19-11 8:18:59 AM

\*77702\*

Page 1

Item ID: DSI 9379-011

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Cargo Mirror Upgrade

Start Date: 19/12/2011 Start Qty: 2.00

\*2\*

Cust Item ID:

Required Date: 20/12/2011 Req'd Qty: 2.00

\*2\*

Customer:

Reference:

Approvals: Process Plan: M.L.S. Date: 11/12/19

Tooling:

Date:

Run Start \*NR1\*

QC: Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
DSI 9379	Rev B

100 0.00

\*100\*

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy DSI 9379 and create labels per PPP DSI 9379-011 CHG001

Pick list

8 x 12/20

for M.L.S. 11-12-19 (2)

10/12/12 (2)

110

QC4- 100% Inspect kits for completeness

0.00

\*110\*

QC

Memo

0.00

Quality Control

8 x 12/20

(+2)

120

Packaging

0.00

\*120\*

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP DSI 9379-011

10/12/20 (2)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 77702**

December-19-11 8:18:59 AM

**\*77702\***

Page 2

Item ID: DSI 9379-011

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Cargo Mirror Upgrade

Start Date: 19/12/2011 Start Qty: 2.00

**\*2\***

Cust Item ID:

Required Date: 20/12/2011 Req'd Qty: 2.00

**\*2\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC21- Final Inspection - Work Order Release

0.00

**\*130\***

QC

Memo

0.00

Quality Control



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December-19-11 8:19:02 AM

Page 1

Work Order ID: 77702

\*77702\*

Parent Item: DSI 9379-011

\*DSI 9379-011\*

Parent Item Name: Cargo Mirror Upgrade

Start Date: 19/12/2011

Required Date: 20/12/2011

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A New Issue 07-06-28 JLM  
10-523 EC verified by:DD

IPP rev B 10.02.16 asper ecn

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3629-1

Manufactured No

110

Each

3.0000

1 2

\*D3629-1\*

Bracket

\*\*

Location

Loc Qty

Loc Code

ST245A

3

70728

3

D3635-1

Manufactured No

110

Each

29.0000

1 2

\*D3635-1\*

Gasket

\*\*

Location

Loc Qty

Loc Code

st073

29

70764

29

D3635-3

Manufactured No

110

Each

47.0000

2 4

\*D3635-3\*

Gasket

\*\*

Location

Loc Qty

Loc Code

st073

47

70296

47

D3646-1

Manufactured No

110

Each

3.0000

1 2

\*D3646-1\*

Arm

\*\*

Location

Loc Qty

Loc Code

ST229

3

70762

3

70762

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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# Picklist Print

Page 2

December-19-11 8:19:02 AM

Work Order ID: 77702

**\*77702\***

Parent Item: DSI 9379-011

**\*DSI 9379-011\***

Parent Item Name: Cargo Mirror Upgrade

Start Date: 19/12/2011

Required Date: 20/12/2011

Start Qty: 2.00

Required Qty: 2.00

D3646-3

Manufactured No

110

Each

3.0000

1 2  
\*\*

**\*D3646-3\***

Arm

## Location

## Loc Qty

## Loc Code

ST229

3

70763

3

110

Each

1.0000

70763  
2 4 34  
\*\* B77703 11/12/2011

D4070-041

Manufactured No

**\*D4070-041\***

Clamp

## Location

## Loc Qty

## Loc Code

ST460

1

68831

1

110

Each

398.0000

68831/X  
3 6  
\*\*

AN3-4A

Purchased No

**\*AN3-4A\***

Bolt

## Location

## Loc Qty

## Loc Code

ST350

398

104291

98

104625

300

110

Each

120.0000

104291  
2 4  
\*\*

AN4-5A

Purchased No

**\*AN4-5A\***

Bolt

## Location

## Loc Qty

## Loc Code

ST355

120

116549

6

117508

114

110

Each

0.0000

117508  
6 12  
\*\* 119337 11/12/11

AN960JD10

NAS1149D0363J

Purchased No

**\*AN960JD10\***

Washer

December-19-11 8:19:02 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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**NOTE:** Date & initial all entries



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December-19-11 8:19:02 AM

Page 3

Work Order ID: 77702

\*77702\*

Parent Item: DSI 9379-011

\*DSI 9379-011\*

Parent Item Name: Cargo Mirror Upgrade

Start Date: 19/12/2011

Required Date: 20/12/2011

Start Qty: 2.00

Required Qty: 2.00

AN960JD416

NAS1149D0463J

Purchased

No

110

Each

0.0000

4 - 8

\*\*

119078

\*AN960JD416\*

Washer

MS21042L3

Purchased

No

110

Each

7,008.000

3 - 6

\*\*

\*MS21042L3\*

Nut

Location

Loc Qty

Loc Code

ST300

7008

117441

16

117885

32

118451

5

118927

3

119017

5994

119075

958

119078

MS21042L4

Purchased

No

110

Each

9,264.000

2 - 4

\*\*

\*MS21042L4\*

Nut

Location

Loc Qty

Loc Code

ST300

9264

117441

51

117601

342

118451

133

119017

3738

119075

5000

119017

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# DART SERVICE INSTRUCTION

REFERENCE ONLY

TO AMEND INSTALLATION INSTRUCTIONS D350-561 REV. C

REF. CANADIAN STC: SH91-20 ISSUE 2

REF. FAA STC: SH856NE

To reduce vibration, Dart has developed the D350-561-141/-143 Mirror Installations to replace the D350-561-041/-043 Mirror Installations. For customers with D350-561-041/-043 Mirror Installations at CHG 005 or earlier who would like to upgrade their installation, the DSI 9379-011 Upgrade Kit can be obtained from Dart. The components for DSI 9379-011 Kit are as defined in Section 1.0 below.

Customers upgrading their installation from D350-561-041/-043 to D350-561-141/-143 should follow instructions given in Figures 1 through 5 of DSI 9379 and refer to Installation Instructions D350-561 Rev. C as applicable.

Customers who are installing a D350-561-141/-143, should refer to Figures 2 through 5 of DSI 9379 and refer to Installation Instructions D350-561 Rev. C as applicable.

This service instruction details the D350-561-141/-143 kits at CHANGE 003 or later, which use D4070-041 Clamps (replaces MS21919WDG7 clamps). For -141/-143 kits at earlier change numbers, the DSI-9379-013 Upgrade kit is available to replace the mil-spec clamps with more robust D4070-041 Clamps.

## 1.0 PARTS LIST

Qty -141	Qty -143	Qty -045	Qty -011	Qty -013	Part Number	Description
X	1		1		D350-561-141	SINGLE MIRROR INSTALLATION (REPLACES -041)
	X		1		D350-561-143	DUAL MIRROR INSTALLATION (REPLACES -043)
	1	X			D350-561-045	MIRROR KIT
			X		DSI-9379-011	UPGRADE KIT
				X	DSI-9379-013	UPGRADE KIT
1		1			D2011-101	MIRROR
1					D2012-105	ARM
1					D2012-107	CLEVIS
1					D2012-111	BRACKET
		2			D2012-113	CLAMP
1					D2012-115	BRACKET
2					D2022-101	SPACER
1*		1*			D3014-1	LOCKNUT
1			1		D3629-1	BRACKET
1			1		D3635-1	GASKET
2			2		D3635-3	GASKET
1			1		D3646-1	ARM
1			1		D3646-3	ARM
2			2	2	D4070-041	CLAMP
3			3		AN3-4A	BOLT/
1					AN3-6A	BOLT
3			2	2	AN4-5A	BOLT
1					AN4-10A	BOLT
8			6		AN960JD10	WASHER
8			4	4	AN960JD416	WASHER
1*		1*			AN960JD416L	WASHER
4			3		MS21042L3	NUT (OR MS21042-3)
4			2	2	MS21042L4	NUT (OR MS21042-4)

\*INCLUDED AS PART OF D2011-101 MIRROR

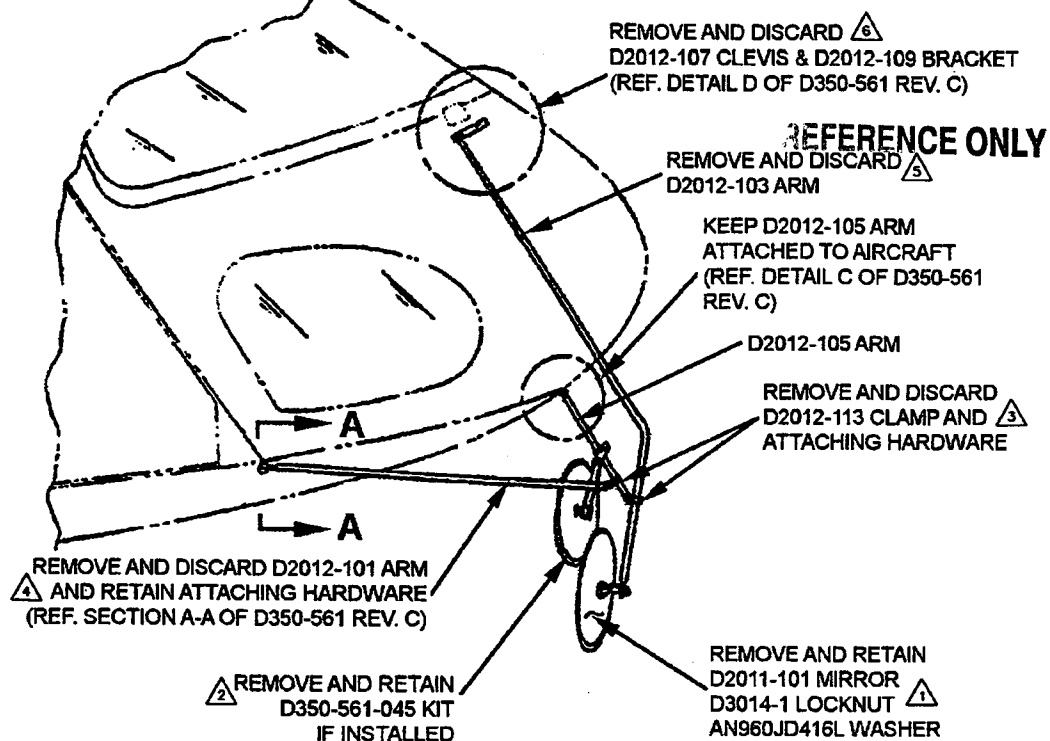
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BRANCH  
DAO # 01-O-01

APPROVED

BY: *[Signature]*  
D. SHEPHERD (DE # 02)

DATE: 10.02.12  
CERT. NO.: SH91-20  
ISSUE NO.: 2

C	D4070-041 WAS MS21919WDG7	CP	10.02.12
B	MS21919WDG7 WAS MS21929WDG7	DC	07.11.26
A	NEW ISSUE	MB	07.07.10
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	N/A	DSI 9379	SHEET 1 OF 5
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**FIGURE 1: REMOVAL OF D350-561-041/-043  
FOR CONVERSION TO D350-141/-143**

**2.0 REMOVAL (IF CONVERTING FROM -041/-043 TO -141/-143 USING  
DSI 9379-011)**

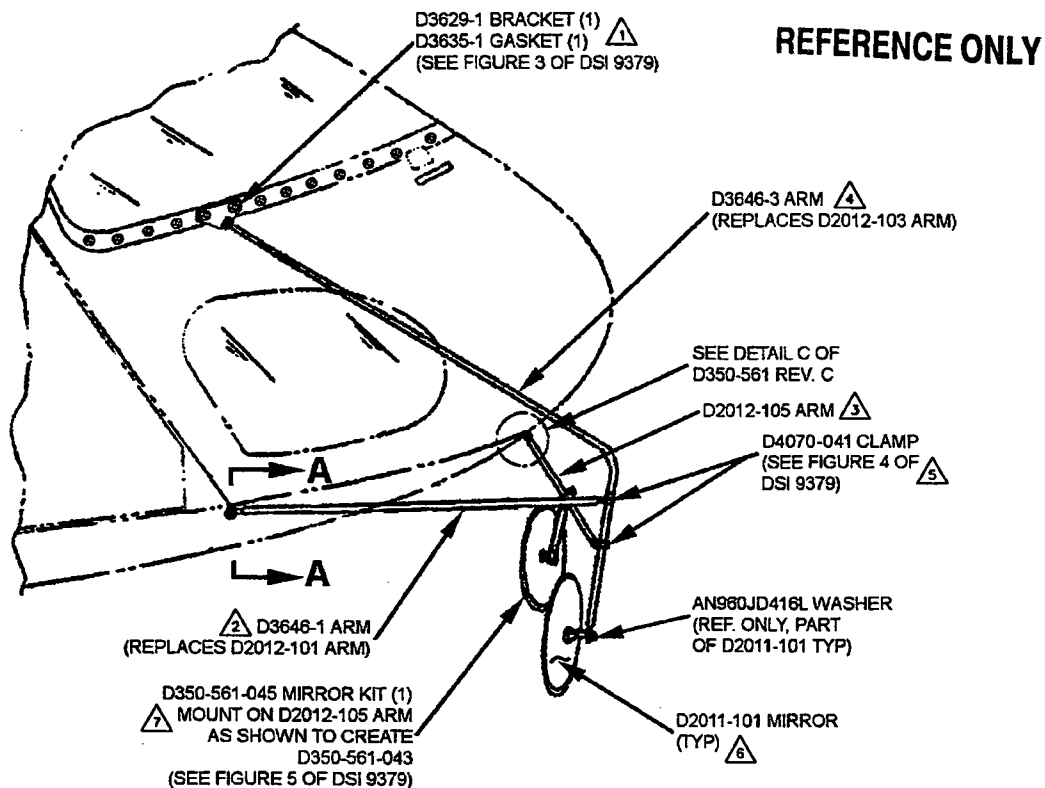
- 1) REMOVE AND RETAIN D2011-101 MIRROR AND ATTACHING FASTENERS.
- 2) REMOVE AND RETAIN D350-561-045 KIT.
- 3) REMOVE AND DISCARD D2012-113 CLAMPS AND ATTACHING  
HARDWARE (2 PLACES).
- 4) REMOVE AND DISCARD D2012-101 ARM. LEAVE D2012-115 BRACKET  
AND HARDWARE ATTACHED TO THE AIRCRAFT.
- 5) REMOVE AND DISCARD D2012-103 ARM.
- 6) REMOVE AND DISCARD D2012-107 CLEVIS. AT THE INSTALLER'S  
DISCRETION, THE D2012-109 BRACKET CAN BE REMOVED OR CAN  
REMAIN INSTALLED. WHETHER OR NOT THE D2012-109 BRACKET IS  
BEING REMOVED, ENSURE BOTH SCREWS ARE RE-INSTALLED.

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MFG. APPR.	N/A	DSI 9379	SHEET 2 OF 5
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**FIGURE 2: D350-561-141/-143 INSTALLATIONS**

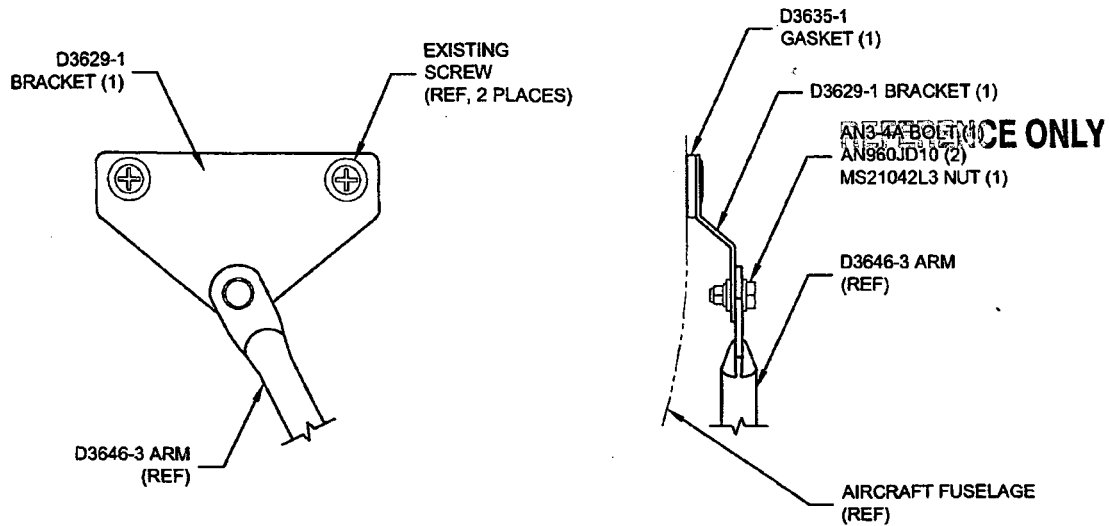
### 3.0 INSTALLATION

- 1) INSTALL D3629-1 BRACKET AND D3635-1 GASKET USING EXISTING SCREWS ON WINDOW. IT IS ACCEPTABLE TO SUBSTITUTE SCREWS WITH LONGER SCREWS OF SAME TYPE.
- 2) INSTALL D3646-1 ARM PER SECTION A-A OF D350-561 REV. C.  
**NOTE:** D3646-1 REPLACES D2012-101.
- 3) INSTALL D2012-105 ARM PER DETAIL C OF D350-561 REV. C.
- 4) INSTALL D3646-3 ARM. **NOTE:** D3646-3 REPLACES D2012-103.
- 5) ATTACH D3646-1 ARM AND D2012-105 ARM TO D3646-3 ARM USING D4070-041 CLAMPS.
- 6) MOUNT D2011-101 MIRROR ONTO D2012-103 ARM.
- 7) IF INSTALLING THE D350-561-143 KIT, INSTALL D350-561-045 MIRROR KIT PER FIGURE 5 OF DSI 9379.

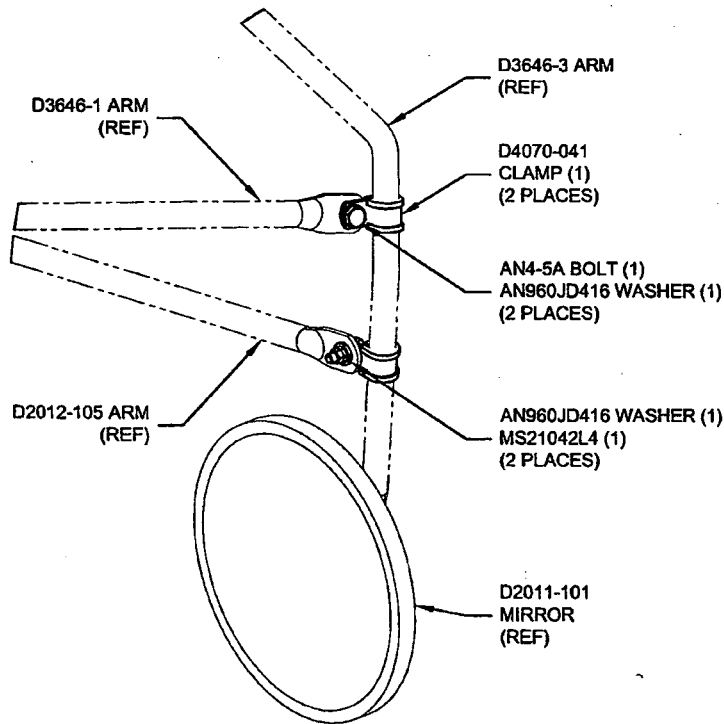
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**FIGURE 3: D3629-1 BRACKET/D3646-3 ARM INSTALLATION**









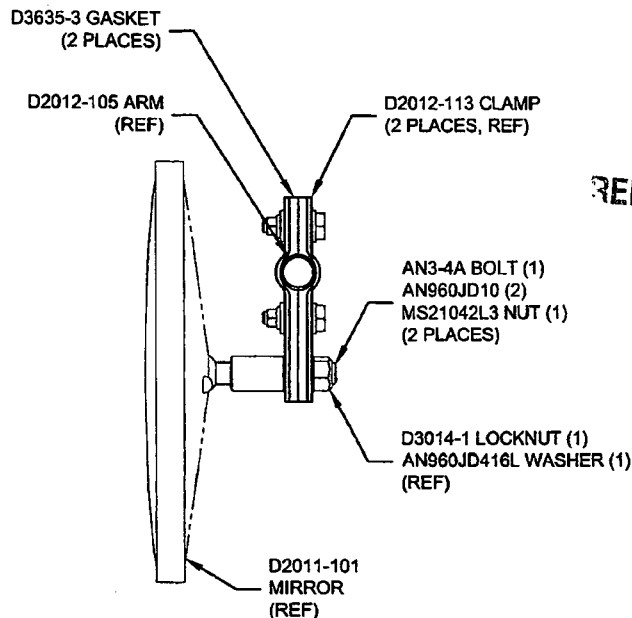
**FIGURE 4: D4070-041 CLAMP INSTALLATION**

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**FIGURE 5: D350-561-045 INSTALLATION**

#### 4.0 WEIGHT AND BALANCE

The following is the weight and balance information for the *D350-561-141 Single Mirror Kit* and the *D350-561-143 Dual Mirror Kit*.

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D350-561-141	2.5 lb	+36.1 in	+90.3 in-lb	9.0 in	22.5 in-lb
Single Mirror Installation	1.1 kg	+0.92 m	+1.0 m-kg	0.23 m	0.25 m-kg
D350-561-143	3.2 lb	+36.1 in	+115.5 in-lb	8.8 in	28.2 in-lb
Dual Mirror Installation	1.5 kg	+0.92 m	+1.4 m-kg	0.22 m	0.33 m-kg

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CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>[Signature]</i>	DSI 9379	SHEET 5 OF 5
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